Life, Heartbeat, Birth: A Medical Basis for Reform

DAVID F. FORTE*

TABLE OF CONTENTS

I. INTRODUCTION

We begin with terminology. Colloquially, parents say, "Before you were born . . . ." The clear meaning, of course, is that the "you" ("our son" or "our daughter") existed in the womb before the coming out known as birth. That son or daughter began biological existence, with a unique DNA, at the moment when a spermatozoon fertilized a human egg. Not inaccurately, the resultant fetus is often called an "unborn child." Pregnant women sometimes say, "I can feel my baby moving," or, if they know the sex, "He's (or she's) really kicking, now." We can then understand why that entity, a unique individual of the human species, is recognized as a rights-bearing entity, deserving—as of right—protection from unjustified harm, as any born human individual would possess that right.[1]

---

* Professor of Law, Cleveland-Marshall College of Law, Cleveland State University. A.B. Harvard, M.A. Manchester, Ph.D. Toronto, J.D. Columbia. The author wishes to acknowledge his indebtedness to the scores of scholars who have analyzed the central holdings of the major cases on abortion, only a few of whom could be appropriately cited in this work. The author is also grateful for the skilled research efforts and drafting suggestions of Matthew Hebebrand, Anthony Miranda, Daniel Dew, Ryan Mulvey, and Christopher Stuart. The conclusions, of course, are that of the author. Donna J. Harrison, Walter M. Weber, and Ronald D. Rotunda provided valuable counsel. The author has been consulted on possible legislation in the Ohio General Assembly regarding the State's interest in prenatal life from the time of a detected fetal heartbeat.

[1] *See* HADLEY ARKES, NATURAL RIGHTS AND THE RIGHT TO CHOOSE 84 (2002) ("Anyone who enters this argument soon discovers that there is no tenable ground on which to claim that the child in the womb, the offspring of homo sapiens, can be anything less than a human being."). Arkes continues:

> In other words, the child became a rights-bearing person only when the mother, in a grand Nietzschean gesture, said in effect, "I permit you to live. I confer upon you, now, dignity and standing." But if the child gains her rights in that way, *they could hardly be natural rights, and indeed they may hardly be rights at all.* For they do not begin—they cannot begin—with the sense that there is anything *intrinsic in the child* that we are

The Supreme Court of the United States, however, has not recognized the unique human individual in the womb as the rights-bearing entity. On the contrary, the decisions of *Roe v. Wade*[2] and *Planned Parenthood of Southeastern Pennsylvania v. Casey*[3] could not have been made without a specific rejection of the yet-to-be-born human individual as one who possesses a right not to be harmed, despite the agnostic protestations of Justice Harry Blackmun.[4] The Supreme Court, instead, has focused only on two other rights-bearing entities: the pregnant woman and the State. According to the Court, the fate of the unborn human lies with the choice of the first, or with whatever legislative authority the Court chooses to accord the second. To be sure, Justice Blackmun's opinion in *Roe v. Wade* was more concerned with the rights and powers of the physician over the pregnant woman and the State, but *Roe*'s revision in *Casey* focuses more upon the relative rights and powers of the pregnant woman and of the State.

This Article does not revisit the moral, legal, and constitutional critiques of the Court's position. The voluminous commentaries on the flaws in the Court's opinions speak for themselves. Rather, this Article seeks to ground an expansion of the protection available to the unborn on the implicit principles underlying current Supreme Court doctrine, refined and modified by recent medical research on nature of pregnancy and human pre-natal development. It will argue that the State's compelling interest in the protection of what the Court has called "potential life" ripens at an earlier point in time than what the Court has termed "viability." That earlier point in time is the detection of cardiac activity in the fetus, evidencing the overwhelming likelihood that the fetus will reach term and live birth, absent an external lethal intervention.

As such, the Article will, for the most part, eschew terms such as "unborn baby" or "unborn child," and deal rather with what the Court has characterized as the State's interest in preserving "potential life," that is, the possibility that the unborn human individual can be protected until birth and become a "born baby" or a "born child." In the main, we shall use "fetus" as referring to the human offspring developing during pregnancy from the moment of conception

---

obliged to respect, or any objective truths that we are obliged to respect as truths, *when they do not accord with our own interests.*

Id. at 179–80; *see also* Patrick Lee & Robert P. George, *The Wrong of Abortion*, *in* CONTEMPORARY DEBATES IN APPLIED ETHICS 13, 13–24 (Andrew I. Cohen & Christopher Heath Wellman eds., 2005).

[2] Roe v. Wade, 410 U.S. 113 (1973).

[3] Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833 (1992).

[4] Justice Blackmun stated that we do not know when life begins. *Roe*, 410 U.S. at 159 ("We need not resolve the difficult question of when life begins. When those trained in the respective disciplines of medicine, philosophy, and theology are unable to arrive at any consensus, the judiciary, at this point in the development of man's knowledge, is not in a position to speculate as to the answer.").

including the embryonic stage of development.[5] We know that, genetically, that fetus is an individual organism of the species Homo sapiens, and that we can define that organism from fertilization until live birth as an "unborn human individual." It is the protection of that form of human life in which the State has a vital interest.

II. THE STATUS OF MEDICAL RESEARCH IN *ROE V. WADE*

Justice Blackmun, it is reported, wrote the opinion of *Roe v. Wade* in a basement office in the Mayo Clinic in Rochester, Minnesota.[6] Before his appointment to the Eighth Circuit Court of Appeals in 1959, Justice Blackmun had served for nearly ten years as resident counsel to the Clinic, the "happiest" time of his life, he later reported.[7] He undoubtedly thought himself uniquely well qualified to solve the issue of abortion, treating it not as a legal issue, and certainly not as a moral issue, but as a medical problem.[8] As has often been noted, his opinion in *Roe v. Wade* dealt little with the pregnant woman as a rights holder, and certainly not with the fetus as an entity deserving of protection, but primarily with the relationship of the physician to his patient.[9] He writes that, prior to the end of the first trimester, "the attending physician, in consultation with his patient, is free to determine, without regulation by the State, that, in his medical judgment, the patient's pregnancy should be terminated."[10] He also explicitly refused to accept the argument that a woman has complete control over her body. Indeed, Justice Blackmun cited with approval an earlier case upholding compulsory sterilization.[11]

---

[5] *See Fetal Development—Overview*, U. MD. MED. CENTER, http://www.umm.edu/ency/article/002398.htm (last updated Nov. 1, 2009). The shorthand term "fetus" is one of convenience. Scientific literature has a more refined and detailed nomenclature about the various stages of prenatal development. *See* Roy G. Farquharson, Eric Jauniaux & Niek Exalto, *Updated and Revised Nomenclature for Description of Early Pregnancy Events*, 20 HUM. REPROD. 3008, 3008–09 (2005).

[6] LINDA GREENHOUSE, BECOMING JUSTICE BLACKMUN: HARRY BLACKMUN'S SUPREME COURT JOURNEY 90 (2005).

[7] *Id.* at 249.

[8] *See* John Hart Ely, *The Wages of Crying Wolf: A Comment on* Roe v. Wade, 82 YALE L.J. 920, 922 (1973) ("The opinion strikes the reader initially as a sort of guidebook, addressing questions not before the Court and drawing lines with an apparent precision one generally associates with a commissioner's regulations.").

[9] Justice Blackmun's focus on the physician has been long noted. *See, e.g.*, Scott A. Moss & Douglas M. Raines, *The Intriguing Federalist Future of Reproductive Rights*, 88 B.U. L. REV. 175, 187 & n.69 (2008).

[10] *Roe*, 410 U.S. at 163; *see also id.* at 164 ("[T]o approximately the end of the first trimester, the abortion decision and its effectuation must be left to the medical judgment of the pregnant woman's attending physician.").

[11] *Id.* at 154 ("[I]t is not clear to us that the claim asserted by some *amici* that one has an unlimited right to do with one's body as one pleases bears a close relationship to the right of privacy previously articulated in the Court's decisions. The Court has refused to recognize

Virtually the total sum of Blackmun's reasoning that the woman had a "right to privacy" deriving from the liberty protected by the Due Process Clause of the Fourteenth Amendment was that he *felt* it to be so.[12] Yet for all his hubris, Blackmun's attempt to base his opinion on medical evidence was a failure, leaving *Roe* likely the most pilloried opinion in Supreme Court history from all sides of the abortion debate.[13]

Blackmun's trimester formula was seen early on as a vessel that carries no cargo.[14] It attempted to define the point during the pregnancy when the State had a sufficiently compelling interest to regulate abortions. The Court identified two different compelling state interests: to protect the health and well-being of the mother, and to protect the "potential" life of the unborn child.[15] But, the Court declared that these interests were separate and distinct and did not attach except at different times during the course of the pregnancy.[16]

Regarding the first point in time when the State's interest could be seen as compelling, the Court declared:

> (a) For the stage prior to approximately the end of the first trimester, the abortion decision and its effectuation must be left to the medical judgment of the pregnant woman's attending physician.

---

an unlimited right of this kind in the past." (citing Buck v. Bell, 274 U.S. 200 (1927) (sterilization); Jacobson v. Massachusetts, 197 U.S. 11 (1905) (vaccination))).

[12] *Roe*, 410 U.S. at 153. Justice Blackmun's lack of constitutional reasoning prompted John Hart Ely's famous criticism that *Roe* is "a very bad decision. . . . It is bad because it is bad constitutional law, or rather because it is *not* constitutional law and gives almost no sense of an obligation to try to be." Ely, *supra* note 8, at 947. *But see* Jack M. Balkin, *Abortion and Original Meaning*, 24 CONST. COMMENT. 291, 311–12 (2007).

[13] *See* Clarke D. Forsythe & Bradley N. Kehr, *A Road Map Through the Supreme Court's Back Alley*, 57 VILL. L. REV. 45, 49 & n.17 (2012).

[14] Chief Justice William Rehnquist and Associate Justice Sandra Day O'Connor were particularly critical. *See* Webster v. Reprod. Health Servs., 492 U.S. 490, 518 (1989) (opinion of Rehnquist, C.J.) ("The key elements of the *Roe* framework—trimesters and viability—are not found in the text of the Constitution or in any place else one would expect to find a constitutional principle."); City of Akron v. Akron Ctr. for Reprod. Health, Inc., 462 U.S. 416, 453–54 (1983) (O'Connor, J., dissenting) ("The trimester or 'three-stage' approach adopted by the Court in *Roe*, and, in a modified form, employed by the Court to analyze the regulations in these cases, cannot be supported as a legitimate or useful framework for accommodating the woman's right and the State's interests. The decision of the Court today graphically illustrates why the trimester approach is a completely unworkable method of accommodating the conflicting personal rights and compelling state interests that are involved in the abortion context.").

Jack Balkin writes that the formula was slightly modified in content by the insistence of Justices William Brennan and Thurgood Marshall that the woman be provided with more liberty to choose an abortion. *See* Jack M. Balkin, Roe v. Wade*: An Engine of Controversy*, *in* WHAT *ROE V. WADE* SHOULD HAVE SAID: THE NATION'S TOP LEGAL EXPERTS REWRITE THE NATION'S MOST CONTROVERSIAL DECISION 3, 10 (2005).

[15] *Roe*, 410 U.S. at 150, 162.

[16] *Id.* at 162–63.

> (b) For the stage subsequent to approximately the end of the first trimester, the State, in promoting its interest in the health of the mother, may, if it chooses, regulate the abortion procedure in ways that are reasonably related to maternal health.[17]

As written, the formula is, and was early recognized as, patently foolish, for certainly a state would have an interest, even in the earliest stages of pregnancy, of making sure that the procedure was performed with due regard for the health of the woman. Yet, Blackmun indicates that that is not so. He writes that, only after the end of the first trimester, may a state:

> regulate the abortion procedure to the extent that the regulation reasonably relates to the preservation and protection of maternal health. Examples of permissible state regulation in this area are requirements as to the qualifications of the person who is to perform the abortion; as to the licensure of that person; as to the facility in which the procedure is to be performed, that is, whether it must be a hospital or may be a clinic or some other place of less-than-hospital status; as to the licensing of the facility; and the like.[18]

The Court chooses the end of the first trimester as the moment in which the State's interest in protecting the life of the mother becomes compelling purportedly due to the fact that mortalities from abortion up to the end of the first trimester were as low or lower than mortalities resulting from natural childbirth.[19]

As Clarke D. Forsythe and Bradley N. Kehr have shown, the medical basis for this conclusion was paltry.[20] There was no supporting record for this assertion from the lower courts in either *Roe* or its companion case, *Doe v. Bolton*.[21] But Blackmun was not interested in the law. He was interested in writing his own medical brief, a brief that turned out to be inadequate. He cited a mere seven medical reports as the basis for his assertion that mortalities from abortion up to the end of the first trimester "appear to be" as low or lower than mortalities resulting from natural childbirth.[22] The cited medical reports were dubious at best. Nearly half of them described statistics from various Communist countries of Eastern Europe, none of which contained data to back those statistics up.[23] The reports from the United States either similarly did not

---

[17] *Id.* at 164.

[18] *Id.* at 163.

[19] *Id.*

[20] *See* Forsythe & Kehr, *supra* note 13, at 51–55.

[21] *See* Doe v. Bolton, 319 F. Supp. 1048 (N.D. Ga. 1970), *modified*, 410 U.S. 179 (1973); Roe v. Wade, 314 F. Supp. 1217 (N.D. Tex. 1970), *aff'd in part, rev'd in part*, 410 U.S. 113 (1973). *See generally* 1–3 ROY M. MERSKY & GARY R. HARTMAN, A DOCUMENTARY HISTORY OF THE LEGAL ASPECTS OF ABORTION IN THE UNITED STATES: *ROE V. WADE* (1993).

[22] *See Roe*, 410 U.S. at 149 & n.44.

[23] *See* Forsythe & Kehr, *supra* note 13, at 51–53.

contain data or had problems of methodology, insufficient data, insufficient sample sizes, or insufficient follow-up.[24]

In fact, more recent ample evidence exists to support the opposite conclusion: that the risk of health to the mother due to abortions is greater than the risk of health to the mother due to natural childbirth. Most significant is an article from the *Obstetrical and Gynecological Survey* (*OGS*) that concludes abortion increases the risk of subsequent preterm birth and placenta previa, causes the loss of the protective effect of a full-term delivery on their lifetime risk of breast carcinoma, and correlates with depression.[25] A previous Finnish study concluded that women who had an abortion were 3.5 times more likely to die within a year compared to women who carried their children to full term, whether by suicide, accidental death, homicide, or natural causes.[26]

The claims that abortion mortality is less than maternal mortality are statistically incomplete.[27] Those assertions compare mortalities between abortion and natural childbirth when each is factored differently: maternal mortality rates are calculated by maternal deaths per 100,000 live births and abortion mortality rates are calculated by "known legal induced abortion-related" deaths per 100,000 legal abortions.[28] The reporting of both abortion-related and maternal deaths are voluntary and, in particular, the identification of a "legal" abortion is subjective, making use of these figures in the United States questionable.[29] And, many of these studies do not look at the long-term effects

---

[24] *See id.*

[25] John M. Thorp, Jr. et al., *Long-Term Physical and Psychological Health Consequences of Induced Abortion: Review of the Evidence*, 58 OBSTETRICAL & GYNECOLOGICAL SURV. 67, 77 (2002).

[26] Mika Gissler et al., *Pregnancy-Associated Deaths in Finland, 1987–1994—Definition Problems and Benefits of Record Linkage*, 76 ACTA OBSTETRICIA ET GYNECOLOGICA SCANDINAVICA 651, 653 (1997).

[27] The most recent study relating to mortality rates between live births and abortions estimated mortality rates in this area in the United States between 1998 and 2005 using data from the Centers for Disease Control and Prevention's Pregnancy Mortality Surveillance System, birth certificates, and Guttmacher Institute surveys. This survey resulted in an estimated pregnancy-associated mortality rate among women who delivered live neonates at 8.8 deaths per 100,000 live births. The mortality rate related to induced abortion was 0.6 deaths per 100,000 abortions. *See* Elizabeth G. Raymond & David A. Grimes, *The Comparative Safety of Legal Induced Abortion and Childbirth in the United States*, 119 OBSTETRICS & GYNECOLOGY 215, 215–16 (2012). But to conclude the risk of death is fourteen times higher for natural childbirth than legal abortion, as the authors of that study do, is unfair, as explained by Forsythe and Kehr, due to different denominators of live births versus legal abortions, even assuming the authors fairly estimated mortality rates with the data they used, which Forsythe and Kehr also raise issues about. *See* Forsythe & Kehr, *supra* note 13, at 60–62; *see also* David C. Reardon et al., *Deaths Associated with Abortion Compared to Childbirth—A Review of New and Old Data and the Medical and Legal Implications*, 20 J. CONTEMP. HEALTH L. & POL'Y 279, 318 (2004).

[28] Forsythe & Kehr, *supra* note 13, at 61.

[29] *Id.*

of an abortion.[30] The Finnish study, on the other hand, looked at all women ages fifteen to forty-nine who died in Finland from 1987 to 1994 and compared maternal and abortion-related deaths per 100,000 women to similarly aged women who were not pregnant and, thereby, looked at the longer term effects.[31]

The study specifically stressed the link of abortions to subsequent suicide, and one of the tragic ironies of abortion law is the mental-health exception to abortion restrictions, though abortion carries a greater risk of causing mental harm to the mother. A 2007 study of post-traumatic stress disorder showed 18% of women who have had an abortion suffered from the disorder—compared with 15% of Vietnam veterans who did so.[32] A 2011 study in the *British Journal of Psychiatry* found an 81% increased risk of mental trauma after an abortion.[33] Numerous other studies have shown the correlation between abortion and other mental health disorders, particularly substance abuse.[34]

The risk to a woman's physical health from abortion can be just as great as the risk to her mental health. In particular, as noted above, having an abortion carries risks for future pregnancies relating to subsequent premature birth and placenta previa. Placenta previa, the formation of the placenta over the cervical opening instead of at the top of the uterus, results in the most harm to the mother, including life-threatening hemorrhage, increased risk of postpartum hemorrhage, and increased incidence of cesarean delivery.[35] The *OGS* study reviewed previous studies that showed between a 30% and 50% increase in placenta previa after an abortion.[36]

Another unfortunate irony of current abortion law is that it has caused an increase in preterm births.[37] The 2006 *Institute of Medicine Report* declares that a prior first trimester induced abortion is an immutable medical risk factor

---

[30] *See* Raymond & Grimes, *supra* note 27, at 215–16.

[31] Mika Gissler et al., *Suicides After Pregnancy in Finland, 1987–94: Register Linkage Study*, 313 BRIT. MED. J. 1431, 1432 (1996).

[32] Sharain Suliman et al., *Comparison of Pain, Cortisol Levels, and Psychological Distress in Women Undergoing Surgical Termination of Pregnancy Under Local Anesthesia Versus Intravenous Sedation*, 7 BMC PSYCHIATRY 24 (2007); *see also* Paul Stam, *Woman's Right to Know Act: A Legislative History*, 28 ISSUES L. & MED. 3, 33 (2012).

[33] Priscilla K. Coleman, *Abortion and Mental Health: Quantitative Synthesis and Analysis of Research Published 1995–2009*, 199 BRIT. J. PSYCHIATRY 180, 182 (2011).

[34] *See* JOSEPH W. DELLAPENNA, DISPELLING THE MYTHS OF ABORTION HISTORY (2006); Priscilla K. Coleman et al., *Induced Abortion and Anxiety, Mood, and Substance Abuse Disorders: Isolating the Effects of Abortion in the National Comorbidity Survey*, 43 J. PSYCHIATRIC RES. 770, 771–73 (2009); Natalie P. Mota et al., *Associations Between Abortion, Mental Disorders, and Suicidal Behavior in a Nationally Representative Sample*, 55 CAN. J. PSYCHIATRY 239, 244–45 (2010); David C. Reardon & Philip G. Ney, *Abortion and Subsequent Substance Abuse*, 26 AM. J. DRUG & ALCOHOL ABUSE 61, 66–68 (2000); David C. Reardon et al., *Substance Use Associated with Unintended Pregnancy Outcomes in the National Longitudinal Survey of Youth*, 30 AM. J. DRUG & ALCOHOL ABUSE 369, 377 (2004).

[35] Forsythe & Kehr, *supra* note 13, at 74.

[36] *Id.*

[37] Thorp et al., *supra* note 25, at 75.

associated with preterm birth.[38] In fact, there have been 122 studies supporting a correlation between abortion and subsequent preterm births.[39] These studies show an increased risk for preterm and very preterm births of 36% and 64%, respectively, after one abortion, and an increased risk of 93% after two abortions.[40] There are no significant studies that disprove this correlation.[41]

Controversially, abortion may also increase the risk of breast cancer. Although highly disputed, studies going back to the late 1950s show a correlation between abortion of one or more pregnancies prior to the first full term pregnancy and breast cancer.[42] The reason for this increased risk is an arrest of the breast tissue in an immature state susceptible to carcinogenic change.[43] The younger the woman at the time of the abortion, and the greater the delay until term pregnancy, the greater is the risk of subsequent cancer formation in the tissue.[44] The risk correlates with a young age at the time of abortion, and the OSG study concludes that for an eighteen-year-old woman who is pregnant for the first time, an abortion almost doubles her lifetime risk of breast cancer.[45]

Thus, from the start, the medical basis on which Justice Blackmun structured the abortion right into three trimesters simply was not there.[46]

The Court in *Roe* went on to identify the State's interest in protecting the potential life of the unborn human individual as attaching at the moment of

---

[38] INST. OF MED. OF THE NAT'L ACADS., PRETERM BIRTH: CAUSES, CONSEQUENCES, AND PREVENTION 625 (Richard E. Behrman & Adrienne Stith Butler eds., 2007).

[39] Brent Rooney, *Bibliography of 122 Studies*, PROLIFE OBGYNS, http://www.aaplog.org/complications-of-induced-abortion/induced-abortion-and-pre-term-birth/bibliography/ (last visited Jan. 13, 2013).

[40] Stam, *supra* note 32, at 30.

[41] *See id.*

[42] *See, e.g.*, Janet R. Daling et al., *Risk of Breast Cancer Among Young Women: Relationship to Induced Abortion*, 86 J. NAT'L CANCER INST. 1584, 1585 (1994); Holly L. Howe et al., *Early Abortion and Breast Cancer Risk Among Women Under Age 40*, 18 INT'L J. EPIDEMIOLOGY 300, 301–02 (1989); M. Segi et al., *An Epidemiological Study on Cancer in Japan*, 48 GANN [JAPANESE J. CANCER RES.] 1, 42–43 (Supp. 1957).

[43] *See* Robert B. Dickson & Marc E. Lippman, *Growth Regulation of Normal and Malignant Breast Epithelium*, *in* 1 THE BREAST: COMPREHENSIVE MANAGEMENT OF BENIGN AND MALIGNANT DISEASES 518, 523 (Kirby I. Bland & Edward M. Copeland III eds., 1998).

[44] *See id.*

[45] Thorp et al., *supra* note 25, at 76.

[46] Recent research has also shown that Justice Blackmun's understanding of pregnancy was also inadequate. He pictured pregnancy in woeful terms: "Maternity, or additional offspring, may force upon the woman a distressful life and future. Psychological harm may be imminent." *Roe*, 410 U.S. at 113, 153. But pregnancy has been shown to improve brain function, KATHERINE ELLISON, THE MOMMY BRAIN: HOW MOTHERHOOD MAKES US SMARTER 18–19 (2005), as well as arresting autoimmune disease in many cases, Jill P. Buyon, *The Effects of Pregnancy on Autoimmune Diseases*, 63 J. LEUKOCYTE BIOLOGY, 281, 281–82, *available at* http://www.jleukbio.org/content/63/3/281.full.pdf.

viability, which became, at that time, after the second trimester.[47] This was so, as the Court put it, because "the fetus then presumably has the capability of meaningful life outside the mother's womb."[48] As is well known, Justice Blackmun's concession to the State interest in "potential life" was a chimera, tied to *Doe v. Bolton*'s open ended definition of what constitutes a "health of the mother" exception.[49] The era of nine-month abortion on demand had begun.[50] Nonetheless, we shall see that identifying viability as the moment when the State's interest attaches engenders its own difficulties.[51]

III. *CASEY*'S MODIFICATION OF *ROE*

By characterizing the decision to terminate a pregnancy as being part of the fundamental right to privacy, *Roe* required that any regulation of abortion had to pass strict scrutiny and had to be narrowly tailored to the State's compelling interest, whether it be to protect the health of the mother after the first trimester, or to protect the "potential life" of the unborn human individual after the second trimester.[52]

The Court in *Casey* changed both the timing and nature of the State's interests in relation to abortion as well as the level of scrutiny afforded any such regulation. It attempted to shift the focus of its abortion jurisprudence away from Justice Blackmun's fixation on the physician and towards the woman's choice and the State's interest in preserving unborn human life. Of the latter, however, *Casey*'s formula has turned out to be signally inadequate.

In *Casey*, the Court rejected the trimester framework as being too "rigid."[53] The trimester framework also undermined and had undervalued the State's interest in protecting the life of the unborn, which the Court announced existed throughout the course of the pregnancy.[54] To protect both the right of the woman to make the "ultimate decision" regarding her pregnancy and the State's interest in protecting the life of the unborn human individual, the Court announced the "undue burden" standard that would serve as the legal criterion for determining the constitutionality of any abortion regulation affecting the

---

[47] *Roe*, 410 U.S. at 163; *see also id. at* 160 (stating viability is usually present at twenty-eight weeks, but may occur as early as twenty-four weeks).

[48] *Id.* at 163.

[49] *Roe*, 410 U.S. at 163–65 ("With respect to the State's important and legitimate interest in potential life, the 'compelling' point is at viability. . . . If the State is interested in protecting fetal life after viability, it may go so far as to proscribe abortion during that period, except when it is necessary to preserve the life or health of the mother. . . . That opinion [Doe v. Bolton, 410 U.S. 179 (1973)] and this one, of course, are to be read together.").

[50] *See* S. REP. No. 98-149, at 6 (1983).

[51] *See infra* Part VI.

[52] *See* City of Akron v. Akron Ctr. for Reprod. Health, Inc., 462 U.S. 416, 427–28 (1983).

[53] Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 873 (1992).

[54] *Id.* at 873, 876.

mother before the point of viability.[55] In sum, the *Casey* decision recognized a woman's right to obtain an abortion before viability "without undue interference from the State"; second, it confirmed the compelling nature of the State's interest in preserving fetal life after the point of viability, with certain "exceptions for pregnancies which endanger" the life of the pregnant mother; and third, it reiterated the legitimacy of the State's interest in protecting both the life of the mother and her fetus *throughout pregnancy*.[56] This effected a significant departure from *Roe*. Not only was the trimester framework discarded, but the Court emphasized the State's interest in protecting the life of the unborn human individual was present from the beginning of the pregnancy.[57] Moreover, the strict scrutiny standard was now apparently disfavored as the constitutional standard, and the presumably less stringent undue burden standard adopted at least up to the point of viability. Regulations by the State prior to viability no longer had to be gauged by whether it furthered the woman's health. The regulations could evince the State's preference for childbirth over abortion, so long as they did not constitute an "undue burden" on the woman's choice.[58] Any future court in assessing a regulation of abortion, therefore, would have to confront a number of questions, including whether it places an undue burden on the woman's right to select an abortion prior to viability, when viability can be determined, what the State's interest was that was present throughout pregnancy, and to what extent a state could limit or prohibit an abortion after viability.

In assessing the validity of the regulations imposed by the Pennsylvania law at issue under the undue burden standard, the Court went on to uphold the challenged informed consent and the twenty-four hour waiting requirement,[59] the parental notification and consent requirements for minors (with a judicial bypass),[60] and the reporting requirements[61] under the new undue burden standard. These requirements were permissible because they were "reasonable measure[s] to ensure an informed choice," even if that choice might result in the woman choosing childbirth over abortion.[62] But with much rhetorical flourish, it rejected the requirement of spousal notification.[63]

The Court in *Casey* defined an undue burden as "a state regulation [that] has the purpose or effect of placing a substantial obstacle in the path of a woman seeking an abortion of a nonviable fetus."[64] The Court further explained that any regulation with the intent to further the State's interest in protecting the

---

[55] *Id.* at 876–77.
[56] *Id.* at 846.
[57] *See id.*
[58] *Id.* at 886.
[59] *Casey*, 505 U.S. at 881–87.
[60] *Id.* at 899–900.
[61] *Id.* at 900–01.
[62] *Id.* at 883.
[63] *Id.* at 887–98.
[64] *Id.* at 877.

potential life of the fetus "must be calculated to inform the woman's free choice, not hinder it."[65]

The undue burden standard has turned out to be notoriously vague and subjective.[66] The Court since *Casey* has only had a few opportunities to utilize the undue burden standard in relation to abortion legislation. In *Mazurek v. Armstrong*,[67] the Court considered a challenge to a Montana law that required all abortions to be performed by physicians, a requirement that the Court had accepted in *Casey*,[68] and of which even Justice Blackmun had indicated approval in *Roe*.[69] A large majority of states had instituted such a requirement.[70] The law affected only one person: a non-physician practitioner. The Court, in a per curiam opinion, held that an undue burden was measured by its effect on a woman's ability to obtain an abortion, and the Court seemed to modify the purpose prong of the undue burden standard.[71] Under the previous

---

[65] *Casey*, 505 U.S. at 877.

[66] *See* Michael F. Moses, Casey *and Its Impact on Abortion Regulation*, 31 FORDHAM URB. L.J. 805, 808 (2004); *see also Casey*, 505 U.S. at 987 ("The ultimately standardless nature of the 'undue burden' inquiry is a reflection of the underlying fact that the concept has no principled or coherent legal basis." (Scalia, J., dissenting)).

[67] 520 U.S. 968 (1997).

[68] 505 U.S. at 885.

[69] 410 U.S. at 165.

[70] 520 U.S. at 969.

[71] *See* Mazurek v. Armstrong, 520 U.S. 968, 972 (1997). The Court's opinion in *Mazurek v. Armstrong* is sometimes interpreted as insinuating that the purpose prong of the undue burden standard alone could not invalidate an abortion restriction. In that case, the Court stated:

> [E]ven assuming the correctness of the Court of Appeals' implicit premise—that a legislative *purpose* to interfere with the constitutionally protected right to abortion without the *effect* of interfering with that right (here it is uncontested that there was insufficient evidence of a "substantial obstacle" to abortion) could render the Montana law invalid—there is no basis for finding a vitiating legislative purpose here. We do not assume unconstitutional legislative intent even when statutes produce harmful results . . . much less do we assume it when the results are harmless.

Id. (citation omitted). In addition, the Court's opinion, much less than requiring both the purpose and the effect of an abortion regulation having an undue burden on a woman's decision to have an abortion, sets a higher standard of proof to show legislative purpose under the undue burden standard. *See id.* The Court's opinion makes clear that no evidence was offered to show the Montana's legislature's purpose in that case—other than the fact that certain studies had shown that there was no significant adverse impact between abortions being performed by physician's assistants rather than physicians and the fact that the bill was originally proposed by an anti-abortion group—both of which the Court declared had no bearing on legislative purpose. *Id.* at 973. The Court since has not established what would be needed to show an invalid purpose under the undue burden standard. *Compare* Stenberg v. Carhart, 530 U.S. 914, 1008 n.19 (2000) (Thomas, J., dissenting) (stating the Court would require "persuasive proof" that a legislature had acted with an unconstitutional intent), *with id.* at 952 (Ginsburg, J., concurring) (stating the state legislators who passed the law at issue sought "to chip away at the private choice shielded by

Montana law, the practitioner could only perform an abortion with a physician present.[72] Therefore, the regulation did not constitute an undue burden because it did not restrict a woman's ability to receive an abortion at the same facility.[73]

In *Stenberg v. Carhart*,[74] the Court heard a challenge to a Nebraska statute that criminalized "partial birth abortion[s]," specifically those in which the physician causes the living unborn human, "or a substantial portion thereof," to pass through the vagina to perform a procedure known to kill the partially born child.[75] The Court reviewed at length the two different procedures that could fall within this definition of "partial birth abortion," the "dilation and extraction" (D&X) procedure and the "dilation and evacuation" (D&E) procedure.[76] The Court construed the statute to apply to both D&X and D&E procedures.[77] The statute was invalidated as an undue burden because D&E was the most commonly used method of performing second trimester previability abortions.[78] In contrast, the Court in *Gonzales v. Carhart*[79] considered a federal ban on partial birth abortions, which were limited to "intact D&E."[80] In this instance, the regulation did not create an undue burden because "[a]lternatives are available to the prohibited procedure" for previability abortions.[81] Significantly, the Court emphasized "the State's interest in promoting respect for human life at all stages in the pregnancy,"[82] and it included in the State's interest "ethical and moral concerns."[83]

Roe" (citing Hope Clinic v. Ryan, 195 F.3d 857, 881 (7th Cir. 1999) (Posner, J., dissenting))).

Some lower courts have admitted the difficulty of meeting the high burden. *See, e.g.*, Karlin v. Foust, 975 F. Supp. 1177, 1210 (W.D. Wis. 1997) (stating "[a]fter [*Mazurek*], the impermissible purpose prong of the undue burden test appears almost impossible to prove"), *aff'd*, 188 F.3d 446, 497 (7th Cir. 1999). However, different circuits have adopted different standards for determining an improper legislative purpose under the undue burden standard, ranging from heightened scrutiny to rational basis review. Lucy E. Hill, Note, *Seeking Liberty's Refuge: Analyzing Legislative Purpose Under* Casey's *Undue Burden Standard*, 81 FORDHAM L. REV. 365, 392–400 (2012).

[72] *Mazurek*, 520 U.S. at 973–74.

[73] *Id.* at 974.

[74] 530 U.S. 914 (2000).

[75] *Id.* at 922.

[76] *Id.* at 924–29.

[77] *Id.* at 938–39.

[78] *Id.* at 945–46.

[79] 550 U.S. 124 (2007).

[80] *Id.* at 141–43.

[81] *Id.* at 164.

[82] *Id.* at 163.

[83] *Id.* at 158. The Court noted that Congress also took ethical and moral concerns into consideration:

> Congress stated as follows: "Implicitly approving such a brutal and inhumane procedure by choosing not to prohibit it will further coarsen society to the humanity of not only newborns, but all vulnerable and innocent human life, making it increasingly difficult to protect such life." The Act expresses respect for the dignity of human life.

IV. THE VIABILITY STANDARD: STATE LEGISLATION

Following *Casey*, states have attempted in some way or another to restrict abortions after the point of viability. There are five ways in which states currently regulate "post-viability" abortions: (1) states with no gestational limit, (2) states that prohibit abortions at the point of viability, (3) states that define viability at twenty-four weeks, (4) states that prohibit abortions in the third trimester, and (5) states that define viability at twenty weeks. However, states that prohibit post-viability abortions also maintain various exceptions, including the life of the mother.[84]

Nine states have no gestational limit, meaning that abortion is permitted at any point in the pregnancy (subject to other unrelated abortion prohibitions).[85] Twenty states prohibit abortions after the point of "viability."[86] Seven states specifically prohibit abortions twenty-four weeks after conception.[87] Four states

---

550 U.S. at 157 (quoting Congressional Findings ¶ (14)(N)). The Court further stated, "It was reasonable for Congress to think that partial-birth abortion, more than standard D&E, 'undermines the public's perception of the appropriate role of a physician during the delivery process, and perverts a process during which life is brought into the world.'" *Id.* at 160 (citation omitted) (quoting Congressional Findings ¶ (14)(K)).

[84] *State Policies in Brief: State Policies on Later Abortion*, GUTTMACHER INST. (Mar. 21, 2013), http://www.guttmacher.org/statecenter/spibs/spib_PLTA.pdf [hereinafter *State Policies in Brief*].

[85] *See id.* (showing that Alaska, Colorado, Mississippi, New Hampshire, New Jersey, New Mexico, Oregon, Vermont, and West Virginia have no gestational limit).

[86] ARK. CODE ANN. § 20-16-705 (Supp. 2011); CAL. HEALTH & SAFETY CODE § 123468 (West Supp. 2013); CONN. GEN. STAT. § 19A-602 (2011); DEL. CODE ANN. tit. 24, § 1790 (2011); HAW. REV. STAT. ANN. § 453-16 (LexisNexis 2011); 720 ILL. COMP. STAT. 510/5 (2012); KY. REV. STAT. ANN. § 311.780 (LexisNexis 2012); ME. REV. STAT. tit. 22, § 1598 (2012); MD. CODE ANN., HEALTH § 20-209 (LexisNexis Supp. 2012); MICH. COMP. LAWS SERV. § 750.323 (LexisNexis Supp. 2012) (prohibits abortion of "quick child" which Michigan courts have interpreted to mean viability); MINN. STAT. § 145.412 (2012); MO. ANN. STAT. § 188.030 (West Supp. 2012); MONT. CODE ANN. § 50-20-109 (2011); N.D. CENT. CODE § 14-02.1-04 (Supp. 2011); OHIO REV. CODE ANN. § 2919.17 (West Supp. 2012); TENN. CODE ANN. § 39-15-201 (2010); UTAH CODE ANN. § 76-7-302 (LexisNexis Supp. 2012); WASH. REV. CODE ANN. § 9.02.110 (West Supp. 2012); WIS. STAT. ANN. § 940.15 (West Supp. 2012); WYO. STAT. ANN § 35-6-102 (2011); *State Policies in Brief*, *supra* note 84.

[87] FLA. STAT. § 390.0111 (2012) (prohibiting abortions in the third trimester) and FLA. STAT. § 390.011 (2012) (defining the third trimester as beginning after 24 weeks); MASS. GEN. LAWS ch. 112, § 12M (2012); NEV. REV. STAT. § 442.250 (2011); N.Y. PENAL LAW § 125.05 (McKinney Supp. 2012); 18 PA. CONS. STAT. § 3211 (2011); R.I. GEN. LAWS ANN. § 11-23-5 (West Supp. 2012) (prohibiting abortion of a quick child) and Rodos v. Michaelson, 527 F.2d 582, 585 (1st Cir. 1975) (interpreting quick child to mean no earlier than 23–24 weeks); S.D. CODIFIED LAWS § 34-23A-5 (Supp. 2012); *State Policies in Brief*, *supra* note 84.

prohibit abortions taking place in the third trimester of the pregnancy.[88] Most states leave the determination of viability to the physician. In Ohio, for example, the statute contains a "rebuttable presumption" that viability is present at twenty-four weeks, but still leaves the ultimate determination to the physician.[89]

However, a fifth category of states has recently emerged. Ten states have passed a version of the Pain-Capable Unborn Child Protection Act.[90] The Act prohibits abortion after twenty weeks of pregnancy based on the State's assessment of medical evidence that the unborn child could experience pain as early as twenty weeks.[91] Nebraska was the first state to pass a version of the Act in 2010, which borrows its language from proposed federal bills.[92] Opponents of the Act have filed suits in several states.[93]

---

[88] IOWA CODE § 707.7 (2011); S.C. CODE ANN. § 44-41-20 (Supp. 2011); TEX. HEALTH & SAFETY CODE ANN. § 170.002 (West 2012); VA. CODE ANN. § 18.2-74 (Supp. 2012); *State Policies in Brief*, *supra* note 84.

[89] OHIO REV. CODE ANN. § 2919.17 (West Supp. 2012).

[90] *See* ALA. CODE § 26-23B-5 (Supp. 2012); ARIZ. REV. STAT. ANN. § 36-2159 (Supp. 2012); GA. CODE ANN. §16-12-141 (Supp. 2012); IDAHO CODE ANN. § 18-505 (Supp. 2012); IND. CODE ANN. § 16-34-2-1 (West Supp. 2012); KAN. STAT. ANN. § 65-6722-6724 (2011); LA. REV. STAT. ANN. § 40:1299.30.1 (Supp. 2013); NEB. REV. STAT. § 28-3,104 (Supp. 2012); N.C. GEN. STAT. § 14-45.1 (Supp. 2012); OKLA. STAT. tit. 63, § 1-745.5 (2011).

[91] NEB. REV. STAT. § 28-3,104 (Supp. 2012) ("At least by twenty weeks after fertilization there is substantial evidence that an unborn child has the physical structures necessary to experience pain . . . .").

[92] Pain-Capable Unborn Child Protection Act, L.B. 1103, 101st Leg. (Neb. 2010); *see also* Unborn Child Pain Awareness Act, H.R. 356, 109th Cong. (2005); Unborn Child Pain Awareness Act, S. 51, 109th Cong. (2005).

[93] In *McCormack v. Heideman*, No. 4:11-CV-00433-BLW, 2013 WL 823318, at *18–21 (D. Idaho Mar. 6, 2013), the United States District Court for the District of Idaho struck down Idaho's Pain Capable Unborn Child Act and a law that banned abortions after twenty weeks of gestational age.

On the other hand, the United States District Court for the District of Arizona denied an opponent's motion for preliminary injunction because the Court found "that Plaintiffs cannot succeed on the merits of their claim that H.B. 2036 is unconstitutional." Isaacson v. Horne, No. CV-12-01501, 2012 U.S. Dist. LEXIS 105825, at *29 (D. Ariz. July 30, 2012). The court believed that Arizona's version of the Pain-Capable law did "not impose a substantial obstacle to previability abortions" and that the "State has shown a legitimate interest in limiting abortions past 20 weeks gestational age." *Id.* at *19, *28. However, the Ninth Circuit granted injunctive relief and enjoined enforcement of the act pending appeal. Isaacson v. Horne, No. 12-16670, 2012 U.S. App. LEXIS 16390, at *2 (9th Cir. Aug. 1, 2012).

Additionally, doctors have filed suit in Georgia state court, challenging the constitutionality of the Georgia version of the law. Lathrop v. Deal, No. 12-cv-224423 (Fulton County Super. Ct. filed Nov. 30, 2012).

Earlier, Justice Stevens, concurring in *Thornburgh*, had argued that the reason the Constitution forbids the State from restricting abortion is that the unborn child cannot feel pain:

V. THE VIABILITY STANDARD: DEFINITION

The definition of viability drawn from *Casey* is "the time at which there is a realistic possibility of maintaining and nourishing a life outside the womb."[94] Among obstetricians, however, the term "viable" is more often used in connection with a pregnancy in which the fetus is alive, no matter at what stage the development may be:

> A doctor will say that a pregnancy is "viable" if there are no indicators of miscarriage and there is a reasonable expectation that the pregnancy will result in the birth of a live infant. A nonviable pregnancy would be a pregnancy in which there is no chance of a live infant being born, such as an ectopic pregnancy, a molar pregnancy, or a pregnancy in which the baby no longer has a heartbeat.[95]

Medical sources also sometimes refer to a "viable fetus" as a living fetus likely to survive to full term.[96] Genetically speaking then, in a viable pregnancy,

---

> I should think it obvious that the State's interest in the protection of an embryo—even if that interest is defined as "protecting those who will be citizens,"—increases progressively and dramatically as the organism's capacity to feel pain, to experience pleasure, to survive, and to react to its surroundings increases day by day. The development of a fetus—and pregnancy itself—are not static conditions, and the assertion that the government's interest is static simply ignores this reality.

Thornburgh v. Am. Coll. of Obstetricians & Gynecologists, 476 U.S. 747, 778 (1986) (Stevens, J., concurring) (citation omitted).

Justice Stevens assumed that the unborn would not feel pain until late in pregnancy, but nonetheless, he argued that the State has the progressive right to intervene as the unborn develop the capacity to feel pain. Other supporters of abortion rights like Justices Blackmun, Brennan, and Marshall agreed. Webster v. Reprod. Health Servs., 492 U.S. 490, 552 (1989) (Blackmun, J., joined by Brennan & Marshall, JJ., concurring in part and dissenting in part).

[94] 505 U.S. at 870.

[95] Krissi Danielsson, *Viable Pregnancy (Viability)*, ABOUT.COM (May 31, 2008), http://miscarriage.about.com/od/pregnancylossbasics/g/viability.htm.

[96] For example, an authoritative source describes the manner in which ultrasound can determine that the fetus is "viable," that is, alive during an early stage in the pregnancy:

> Ultrasound (see § 2.9) is a non-invasive test that is useful in assessing many indicators of fetal health during pregnancy. It allows rapid diagnosis of fetal abnormalities so appropriate interventions can be considered. . . .
>
> Often during the course of pregnancy an ultrasound is performed routinely in the first trimester to confirm the pregnancy and fetal viability.

KRISTYN S. APPLEBY & JOANNE TARVER, MEDICAL RECORDS REVIEW § 2.21 (3d ed. 1999). Experts continue to note the different ways in which the term "viability" is used. See, for example, the discussion by Peter Callen:

> Two areas in which terminology is often either misused or misunderstood in obstetric ultrasonography are fetal life and age. The term *viability* is defined as the ability to survive in the extrauterine environment. Even in cases of very late third trimester

a particular individual of the human species (the "viable fetus") has been ascertained to exist and is likely to be born.

The Supreme Court, however, uses "viability" in a different sense. In *Roe*, Justice Blackmun declared that a fetus is viable when it is "potentially able to live outside the mother's womb, albeit with artificial aid."[97] After the point of viability the State's interest in "potential life" becomes compelling. As Justice Blackmun attempts to explain:

> With respect to the State's important and legitimate interest in potential life, the "compelling" point is at viability. This is so because the fetus then presumably has the capability of meaningful life outside the mother's womb. State regulation protective of fetal life after viability thus has both logical and biological justifications. If the State is interested in protecting fetal life after viability, it may go so far as to proscribe abortion during that period, except when it is necessary to preserve the life or health of the mother.[98]

As noted, Justice Blackmun's perspective is to focus on the physician's decision, and his opinion does not center on either the woman or on her now-existent offspring. Even so, the point of viability bears no logical relation to the connection between the State's interest in "potential life" and the "right" of a woman to have a physician end her pregnancy.

Roe's formula is that once a child can survive outside the mother's womb, the State can require her to keep it. If it cannot survive, she can get rid of it, that is, she can have her pregnancy terminated inevitably producing a dead child. The entire proposition is curiously contradictory. It says to the skipper of a lifeboat, "If there is someone in your boat who cannot swim, you may throw him overboard. But if he can swim, you must allow him to stay onboard."

The logic of the formula is backward. If a state has an interest in protecting "potential life," as the Court has put it, it should be able to require that the human "potential life" be protected before viability in the only way it can be protected, by continuing to have it nurtured in its mother's womb. Conversely, if the human individual could survive outside its mother's womb, and she has a right to terminate her pregnancy, why must she be forced to keep it? The Court could have required that if she chooses to terminate her pregnancy after viability, the physician must use the method most likely to assure the survival of the born child, but the Court did not do that. In fact, after *Roe*, the Court struck down a Missouri law that would have required those performing abortions to

---

> examinations, this statement cannot be used with complete certainty. I prefer to state that the embryo or fetus is *living*, if that is the case, and use the term *nonviable* for those embryos or fetuses that either are dead or are not capable of living in the extrauterine environment.

PETER W. CALLEN, ULTRASONOGRAPHY IN OBSTETRICS AND GYNECOLOGY 8 (5th ed. 2008).

[97] 410 U.S. at 160.

[98] *Id.* at 163–64.

exercise professional skill and care to preserve the life of the fetus.[99] It also voided a Pennsylvania law that required physicians to use the abortion technique that provided the best opportunity for the fetus to be born alive in abortions after viability.[100]

What exactly was the legal relationship that *Roe* defined between a pregnant woman and the fetus that was developing within her uterus? Was the right to control the fate of the fetus ancillary to the woman's right to control her own body? This, the Court rejects. It dismisses the argument of amici who argued that "one has an unlimited right to do with one's body as one pleases" as related to the right of privacy that would include the decision to abort.[101] Nor did the Court define the fetus simply as a biological organism of no significance. In his opinion, Justice Blackmun refers to the fetus as "prenatal life"[102] or that which is possessed of "potential life," deserving of at least some limited protection by the State (after viability).[103]

VI. THE VIABILITY STANDARD: THE RATIONALE

What then can save the viability line from being hopelessly irrational and arbitrary? What keeps it from being merely a positivist line drawn in the sand? Is there any principle that could underlay *Roe*'s assertion of viability as the line, especially after *Casey*, when the balance of rights shifts from the woman to the State? Or more precisely, why is the State's interest compelling enough to justify restricting the Court-established privacy right of the woman to obtain an abortion? The answer seems to inhere in the opinion's oft-repeated phrase that after viability, the fetus "has the capability of meaningful life outside the mother's womb,"[104] that is to say, the fetus can survive on its own.

But no born child can survive on its own, let alone a pre-born. All are dependent on externally provided sustenance and care. The only difference between the born and the pre-born is in the specificity of who provides the sustenance. Before viability, the unborn human individual is (normally) dependent only on one person: its mother. After viability, its survival is dependent on indeterminate persons, who may, but do not necessarily, include its mother. But if dependency confers on a particular person the right to determine the fate of the dependent individual, then we have come close to defining a property right of the mother in the fetus, allowing the mother to determine its fate as she wills.[105] Some commentators and judges have actually

---

[99] Planned Parenthood of Cent. Mo. v. Danforth, 428 U.S. 52, 83 (1976).

[100] Colautti v. Franklin, 439 U.S. 379, 397 (1979).

[101] *Roe*, 410 U.S. at 154.

[102] *Id.* at 150.

[103] *Id.* at 150, 154, 163.

[104] *Id.* at 163.

[105] That position would make the abortion cases not just analogous to *Dred Scott v. Sandford*, 60 U.S. 393 (1857), but based on the same doctrine.

embraced such a view.[106] Yet both the *Roe* and *Casey* majorities considered the fetus as having some kind of separate existence from the mother, enough of an existence that the State could have an interest in it. Whatever subsequent judges made of the doctrines of *Roe* and *Casey*, the passage of the Born-Alive Infants Protection Act of 2002[107] and the majority opinion in *Gonzales v. Carhart* seem to have settled the question that, wherever the abortion right comes from, it is not based on the principle that one human individual can have sufficient *possession* of another human individual to decide whether the latter shall live or die.

On what basis then, does the Court choose viability as the line at which the State's interest becomes, at least theoretically, compelling? Certainly viability by itself does not guarantee a survivable birth, even with extraordinary external assistance. Statistics demonstrate the survival risk of premature children even with intensive care is far from guaranteed. Less than 10% survive at twenty-two weeks, 10–35% at twenty-three weeks, 40–70% at twenty-four weeks, 50–80% at twenty-five weeks, 80–90% at twenty-six weeks, over 90% at twenty-seven weeks, over 95% at thirty weeks, and over 98% at thirty-four weeks.[108] Nor is there a consensus among physicians as to when viability actually occurs. *Roe* claimed it was twenty-eight weeks.[109] *Casey* moved the line to about twenty-four weeks.[110] Some argue that viability can be as early as twenty-two weeks or even twenty weeks, but it is difficult to determine in any particular instance. In a recent survey, 2.0% of specialists gauged "threshold viability" at twenty-two weeks, 37.2% at twenty-three weeks; 55.3% at twenty-four weeks, 3.4% at twenty-five weeks, and 2.2% at twenty-six weeks.[111] There is not much consensus there.

Moreover, statistics can estimate the chances of survival of a prematurely born infant, but the prediction for a particular fetus to survive remains inexact. The standard test for viability is by determining the crown-rump length of the

---

[106] This, I take it, is Judith Jarvis Thomson's classical defense of abortion even of a living human being. Judith Jarvis Thomson, *A Defense of Abortion*, 1 PHIL. & PUB. AFF. 47, 61–62 (1971). It certainly was Judge Clement Haynsworth's view in *Floyd v. Anders* when, in quashing an indictment for the killing of an infant who had survived an abortion, he claimed that "the Supreme Court declared the fetus in the womb is neither alive nor a person within the meaning of the Fourteenth Amendment." 440 F. Supp. 535, 539 (D.S.C. 1977); *see* Hadley Arkes, *Antijural Jurisprudence: The Vices of Judges Enter a New Stage*, *in* THAT EMINENT TRIBUNAL: JUDICIAL SUPREMACY AND THE CONSTITUTION 59, 59–84 (Christopher Wolfe ed., 2004).

[107] Pub. L. No. 107-207, 116 Stat. 926 (2002) (codified at 1 U.S.C. § 8 (2006)).

[108] *What Are the Chances That My Baby Will Survive? Chances for Survival*, SPENCER'S HOPE, http://www.spensershope.org/chances_for_survival.htm (last visited Feb. 9, 2013).

[109] *Roe*, 410 U.S. at 160.

[110] *Casey*, 505 U.S. at 860.

[111] Francis Nuthalapaty et al., *Is There a Preferred Gestational Age Threshold of Viability?: A Survey of Maternal-Fetal Medicine Providers*, 20 J. MATERNAL-FETAL & NEONATAL MED. 293, 294–95 (2007).

fetus through ultrasound.[112] That provides the physician with an estimate of gestational age, and based on that gestational age, the physician can attempt to predict the chances of survival. Even in estimating the gestational age of the fetus, the results are not very specific. Based on an ultrasound examination, an estimate of gestational age of a fetus of around eight weeks has a margin of error of plus or minus three days. By the second trimester, the margin of error is plus or minus two weeks, and by the third (when viability is supposed to be determined), the margin of error is plus or minus three weeks.[113] A three-week error in calculating gestational age at the time of "viability" can change the doctor's prediction of the infant's chances of survivability from less than 10% to as much as 90%.[114] The indeterminacy of viability compromises the effectiveness of post-viability bans on abortion. In fact, in *Colautti v. Franklin*, the Supreme Court struck down a criminal statute on vagueness grounds that required a physician to determine whether the fetus "may be viable."[115]

Moreover, the chances for a premature infant to survive depend on much more than mere gestational age. External conditions, such as the health of the mother, the particular circumstances of the pregnancy, and the kind of care available have as much to do with survivability. An infant born at twenty-four weeks into a tertiary care center can have as much as a 30–40% chance of survival.[116] One of the same age born outside of a hospital has virtually no chance of survival.[117]

The disappointing statistics on survivability of prematurely born infants, the relative indeterminacy as to when any particular fetus may be viable, and the fact that even viable infants depend as much on the particular circumstances of the pregnancy and the care available for survival give us the underlying reason why the Court allows the State to require the pregnant woman to carry her fetus to full term. The Court chose the viability line as a point when the State's interest in the "potential life" of the fetus to be born allows it to compel the

---

[112] CALLEN, *supra* note 96, at 13.

[113] Interview with Donna J. Harrison, Dir. of Research & Pub. Policy, Am. Ass'n of Pro-Life Obstetricians & Gynecologists (Jan. 1, 2013) [hereinafter Interview with Donna J. Harrison]; *see also* Pavitra Delpachitra et al., *Ultrasound Reference Chart Based on IVF Dates to Estimate Gestational Age at 6–9 Weeks' Gestation*, ISRN OBSTETRICS & GYNECOLOGY, 2012, at 1, 1–6, *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3409520/pdf/ISRN.OBGYN2012-938583.pdf. It is interesting that even Justice Brennan, likely the most radical pro-abortion rights member of the *Roe* Court, thought the viability line "imprecise." Balkin, *supra* note 14, at 3, 10.

[114] Developments in testing for lung capacity of the fetus have the promise of more accurate results. *See, e.g.*, Mariko Serizawa & Kazuo Maeda, *Noninvasive Fetal Lung Maturity Prediction Based on Ultrasonic Gray Level Histogram Width*, 36 ULTRASOUND MED. & BIO., at 1998, 1998–2003 (2010), *abstract available at* http://www.ncbi.nlm.nih.gov/pubmed/20950934.

[115] Colautti v. Franklin, 439 U.S. 379, 379 (1979).

[116] E. ALBERT REECE & JOHN C. HOBBINS, CLINICAL OBSTETRICS: THE FETUS AND MOTHER 1102 (3d ed. 2008).

[117] Interview with Donna J. Harrison, *supra* note 113.

woman to continue to nurture it until birth (absent a threat to her health), for *it is full term of pregnancy that best guarantees that the fetus can have a "meaningful life outside the mother's womb."*[118] At bottom, viability for the Court is a marker that the human individual was on the way to be born and could be protected until it reached full term birth.

VII. AN ALTERNATIVE: HEARTBEAT

There is a better marker. It is one that has a very high degree of predictability of infant survival. It is easily determined and does not depend on guesses about gestational age. It fulfills more fully than viability the reason why the State's interest in "the life of the fetus that may become a child"[119] is present throughout the pregnancy. That marker is the point at which the onset of cardiac activity in the fetus occurs. We are speaking of heartbeat.

The Court's underlying rationale for having adopted "viability" as the defining moment when the State's interests are sufficiently compelling is that at such point the fetus is capable of surviving until it is born. The chances of the fetus surviving in a postnatal sense are then high enough for the State to take an independent interest in its fate and to make sure that it is carried to full term so that its survival is more fully guaranteed. As the Court enunciated in *Colautti v. Franklin*, "there must be a potentiality of 'meaningful life,' not merely momentary survival."[120] Full term survival, however, is not only seen in the indeterminate state of "viability." It can be predictably seen at an earlier point in time.

Recent medical research has determined that although the miscarriage rate for all pregnancies may be as high as 30%, once a fetus possesses cardiac activity,[121] its chances of surviving to full term are between 95%–98%.[122] That extraordinary difference is the key in determining ultimate survivability.

For physicians, "fetal viability" is detected by means of cardiac motion.[123] The significance of these findings affects the manner in which the State's interest in the life of the unborn human becomes real and compelling. Fetal heart rate is easily detectable by readily available medical technology and represents a much more determinable point at which the State's interest in the

---

[118] Roe v. Wade, 410 U.S. 113, 163 (1973) (emphasis added).

[119] Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 846 (1992).

[120] 439 U.S. at 387 (citation omitted).

[121] Farquharson et al., *supra* note 5, at 3008.

[122] S.A. Brigham et al., *A Longitudinal Study of Pregnancy Outcome Following Idiopathic Recurrent Miscarriage*, 14 HUMAN REPROD. 2868, 2868–71 (1999), *available at* http://humrep.oxfordjournals.org/content/14/11/2868.long; Aimee Seungdamrong et al., *Fetal Cardiac Activity at 4 Weeks After In Vitro Fertilization Predicts Successful Completion of the First Trimester of Pregnancy*, 90 FERTILITY & STERILITY 1711, 1711–15 (2008), *available at* http://ac.els-cdn.com/S0015028207031615/1-s2.0-S0015028207031615-main.pdf?_tid=e66c946e-a6dd-11e2-9bc3-00000aacb35f&acdnat=1366148456_d84b6fde76e89e81480916852ad0bfc9.

[123] CALLEN, *supra* note 96, at 14.

protection of prenatal life ripens. While viability is uncertain and ambiguous, the point at which an independent fetal heart rate is detectable (usually between the fifth and sixth weeks of pregnancy), is unambiguous, and is a strong predictor of survivability to term. It does not require determinations based on estimates by individual doctors, but can be objectively identified through the relatively simple application of medical technologies like ultrasonography.

According to current standard medical practice, physicians rely upon a number of medical devices to determine the existence of cardiac activity in a fetus depending on the gestational age of the fetus and the medical condition of the pregnant woman. A transvaginal ultrasound can be utilized early in the pregnancy and can detect the presence of cardiac activity possibly as early as five and one half weeks of gestation.[124] A transabdominal ultrasound can often detect fetal cardiac activity from as early as six or seven weeks.[125] A Doppler transducer can be utilized towards the end of the first trimester and can detect a fetal heartbeat usually between thirteen to fifteen weeks of gestational age.[126]

Physicians may use either transvaginal or transabdominal ultrasound or Doppler transducer depending upon the gestational age of the fetus and the condition of the pregnant woman. In a normal pregnancy, a patient presents herself to her physician sometime early in the pregnancy, often between five or six weeks of gestational age.[127] After determining that the woman is pregnant and conducting a pelvic examination, often nothing further is done until later in the pregnancy. Some physicians use a transvaginal ultrasound early in the pregnancy to confirm gestational age.[128]

Frequently in the early part of the second trimester, a physician will examine the pregnant woman with transvaginal ultrasound to screen for Down Syndrome.[129] If there is spotting or there are complications early in the pregnancy, a physician will seek to determine by either transabdominal or transvaginal ultrasound if there has been intrauterine fetal death.[130] In that case, the physician is looking for the presence or absence of cardiac activity.[131]

If a woman seeks an abortion and she is in the early stages of her pregnancy, she may choose a medical or surgical procedure. The proportion of medical abortions is increasing and is near 40% today.[132] If she chooses a medical abortion, the physician may confirm gestational age by transabdominal

---

[124] *See* ROBERT A. NOVELLINE, SQUIRE'S FUNDAMENTALS OF RADIOLOGY 427 (6th ed. 2004).

[125] *Id.*

[126] CALLEN, *supra* note 96, at 12.

[127] *Id.* at 13.

[128] *Id.*

[129] Rebecca Smith-Bindman et al., *Second-Trimester Ultrasound to Detect Fetuses with Down Syndrome: A Meta-analysis*, 285 JAMA 1044, 1045 (2001).

[130] CALLEN, *supra* note 96, at 200.

[131] *Id.*

[132] Rachel K. Jones & Kathryn Kooistra, *Abortion Incidence and Access to Services in the United States* 2008, 43 PERSPS. ON SEXUAL & REPROD. HEALTH 41, 46 (2011).

or transvaginal ultrasound, or the physician, after complying with the requirements of the law, may prescribe or administer the abortifacient medications without utilizing ultrasound first, but ultrasonography is a typical part of abortion practice.[133]

In short, fetal heart rate is an indicator of "fetal viability" (a living fetus) and its survivability. Detected cardiac activity is therefore the point at which the State's interests in the life of an unborn human individual sufficiently justify the prevention of its abortion and is a preferred place marker over the current use of "viability." Often in Supreme Court opinions, viability and survivability are conflated, but the two concepts are (and should be) distinguishable, for it is survivability that is at the heart of the State's interest.

We can see then that if the true interest of the State in preserving fetal life inheres in the capacity for a fetus to have "meaningful life" *ex utero*, then indeterminate viability may not be the strongest candidate around which an abortion jurisprudence ought to be constructed. If potential life is of interest to the State, if the State has a right to prefer childbirth over abortion, then the protection of that life should extend *before* the uncertain point of viability to the point at which *survivability* to full term is, all things considered, a strong statistical likelihood. Research now demonstrates that fetal heartbeat represents a more definable point to ascertain survivability than the ambiguous concept of viability that has been adopted by the Court.

The use of relatively simple technology, i.e., ultrasonography, is already used to evaluate pregnancies within the first trimester. These evaluations can identify the first fetal organ to operate on a detectable level—the heart—at around five to six weeks of gestation.[134] Developmentally speaking, it is at five to six weeks gestation that the human embryonic period officially begins, and

---

[133] RONALD S. GIBBS ET AL., DANFORTH'S OBSTETRICS AND GYNECOLOGY 588 (10th ed. 2008). Transvaginal ultrasounds have apparently been a routine part of abortion practice. Benson et al., *Early Abortion Services in the United States: A Provider Survey*, 67 CONTRACEPTION 287, 289 (2003) ("Vaginal ultrasound was always performed before the early surgical abortion at . . . (83%) [of the] sites [participating in the study], under certain conditions at . . . (16%) [of the] sites, and never at . . . (1%) [of the] site[s]."); *id.* at 290 ("Vaginal ultrasound was very common before the medical abortion, with . . . (92%) [of the] sites reporting that they always performed it.").

[134] *See, e.g.*, Elizabeth Lazarus, *What's New in First Trimester Ultrasound*, 41 RADIOLOGIC CLINICS N. AM. 663, 663–79 (2003); *see also* Toshiyuki Hata et al., *Assessment of Embryonic Anatomy at 6–8 Weeks of Gestation by Intrauterine and Transvaginal Sonography*, 12 HUM. REPROD. 1873, 1873–76 (1997). Improved technologies, such as advanced visual resolution techniques, however, have allowed prenatal ultrasound detection of fetal cardiac activity to take place at as early as five weeks at which point the human embryo has attained a length of 1.6 mm. Elizabeth Kagan Arleo & Robert N. Troiano, *Outcome of Early First-Trimester Pregnancies (<6.1 Weeks) with Slow Embryonic Heart Rate*, 197 AM. J. ROENTGENOLOGY 252, 252–55 (2011); Roy A. Filly & Frank P. Hadlock, *Sonographic Determination of Menstrual Age*, *in* PETER CALLEN, ULTRASONOGRAPHY IN OBSTETRICS AND GYNECOLOGY 146–70 (4th ed. 2000); Eric Jauniaux et al., *The Role of Ultrasound Imaging in Diagnosing and Investigating Early Pregnancy Failure*, 25 ULTRASOUND OBSTETRICS & GYNECOLOGY 613, 613–24 (2005).

the detectability of a fetal heartbeat only slightly tracks behind the sonographic visibility of a fetus.[135]

Cardiac activity should be detected by the time "the embryo measures between 4 to 5 mm," a length that "corresponds to a [gestational age] of 6 to 6.5 weeks."[136] Embryonic cardiac activity develops according to a rather predictable schedule, starting prior to the sixth week of gestation at "between 100 and 115 beats per minute;" peaking at "144 to 159 BPM" and "plateau[ing] at 137 to 144 [beats per minute]" no later than the ninth week; and thereafter "slowly decreas[ing]."[137]

Research indicates that once fetal heartbeat has been detected, and prenatal gestation has achieved eight to twelve weeks of development, the rate of miscarriage, or natural abortion, remains surprisingly low throughout the rest of the pregnancy, such that approximately 98% of naturally conceived pregnancies carry to term.[138] In some instances, where cardiac activity has been detected between six to seven weeks into fetal development (around forty-five days), 99% of such pregnancies ultimately result in live birth.[139] However, in cases where fetuses have been conceived by in vitro fertilization (IVF), the rates of miscarriage are somewhat higher, with up to 25% of pregnancies lost during the first trimester even after detection of fetal heartbeat.[140] For natural intrauterine pregnancies, however, the detection of fetal heartbeat becomes the easiest and the most sure statistical predictor of survivability to live birth. Even in

---

[135] George M. Graham III, *Ultrasound Evaluation of Pregnancy in the First Trimester*, 4 DONALD SCH. J. ULTRASOUND OBSTETRICS & GYNECOLOGY 17, 17 (2010).

[136] *Id.* at 20.

[137] *Id.*

[138] *See* Kathryn A. Cashner et al., *Spontaneous Fetal Loss After Demonstration of a Live Fetus in the First Trimester*, 70 OBSTETRICS & GYNECOLOGY 827, 827–30 (1987). To be precise, Cashner's research demonstrates that the risk of pregnancy loss once fetal heartbeat has been detected *in an asymptomatic woman greater than 8 weeks gestation* is only 2%. *Id.* Similar fetal survival rates in the general obstetric population, viz., 98%, have been reported in other studies. *See, e.g.*, W.E. Mackenzie et al., *Spontaneous Abortion Rate in Ultrasonographically Viable Pregnancies*, 71 OBSTETRICS & GYNECOLOGY 81, 81–83 (1988).

[139] *See* Michael P. Steinkampf et al., *Identification of Early Pregnancy Landmarks by Transvaginal Sonography: Analysis by Logistic Regression*, 68 FERTILITY & STERILITY, 168, 168–70 (1997).

[140] *See* M.J. Lambers et al., *Factors Determining Early Pregnancy Loss in Singleton and Multiple Implantations*, 22 HUMAN REPROD. 275, 275–79 (2007); *see also* Giovanni B. La Sala et al., *Spontaneous Embryonic Loss After In Vitro Fertilization with and without Intracytoplasmic Sperm Injection*, 82 FERTILITY & STERILITY 1536, 1536–39 (2004); Steven D. Spandorfer et al., *Relationship Between Maternal Age and Aneuploidy in In Vitro Fertilization Pregnancy Loss*, 81 FERTILITY & STERILITY 1265, 1265–69 (2004). Some research suggests that women with a history of multiple miscarriages have a higher rate of spontaneous abortion even after the detection of a fetal heartbeat. Marc R. Laufer et al., *Pregnancy Outcome Following Ultrasound-Detected Fetal Cardiac Activity in Women With a History of Multiple Spontaneous Abortions*, 1 J. SOC'Y GYNECOLOGIC INVESTIGATION 138, 138–42 (1994).

"threatened pregnancies," after a detection of fetal heartbeat, there was only a 3.7% loss.[141]

The onset of fetal heartbeat, and the continued normal gestational development of fetal cardiac activities—a fetal heart beat of no fewer than 100 beats per minute in the early trimester, for example[142]—serve as important factors in predicting the success of a pregnancy.[143] Even among the tiny percentage of fetuses with a detected heartbeat who do not survive to full term, the type of heartbeat detected can signal a problem. A slow fetal heart rate, for example, is a known "risk factor for miscarriage."[144] That is, where fetal cardiac activity is observed at a rate of less than 100 beats per minute before approximately the 6-week mark, or less than 120 beats per minute before the end of the seventh, there is a significant increased rate of natural pregnancy loss.[145] The demise of a fetus from an abnormally slow heart will generally occur within one week of detection, and most by the end of the first trimester.[146] But for the few fetuses with abnormally low heartbeats who make it through the first trimester, "[t]he long-term prognosis . . . is fairly good, in that an embryo with a slow early heart rate who is still alive at the end of the first trimester has a high likelihood of becoming a healthy neonate."[147]

---

[141] Y. Tannirandorn et al., *Fetal Loss in Threatened Abortion After Embryonic/Fetal Heart Activity*, 81 INT'L J. GYNECOLOGY & OBSTETRICS 263, 263–66 (2003), *available at* http://ac.els-cdn.com/S0020729203000766/1-s2.0-S0020729203000766-main.pdf?_tid=e44f6a96-a6d1-11e2-b84c-00000aab0f01&acdnat=1366143298_d3f152fa18fccb2930e1d90cd18f43f5.

[142] *See* Peter M. Doubilet et al., *Embryonic Heart Rate in the Early First Trimester: What Rate Is Normal?*, 14 J. ULTRASOUND MED. 341, 341–43 (1995) [hereinafter Doubilet et al., *Embryonic Heart Rate*]; *see also* Peter M. Doubilet et al., *Long-Term Prognosis of Pregnancies Complicated by Slow Embryonic Heart Rates in the Early First Trimester*, 18 J. ULTRASOUND MED. 537, 537–41 (1999); Naohiro Tezuka et al., *Embryonic Heart Rates: Development in Early First Trimester and Clinical Evaluation*, 32 GYNECOLOGIC & OBSTETRIC INVESTIGATION 210, 210–12 (1991).

[143] *See* Mustafa Bahceci & Ulun Ulug, *Does Underlying Infertility Aetiology Impact on First Trimester Miscarriage Rate Following ICSI? A Preliminary Report from 1244 Singleton Gestations*, 20 HUMAN REPROD. 717, 717–21 (2005); *see also* Giovanni B. La Sala et al., *Spontaneous Embryonic Loss Following In Vitro Fertilization: Incidence and Effect on Outcomes*, 191 AM. J. OBSTETRICS & GYNECOLOGY 741, 741–46 (2004); Philippe Tummers et al., *Risk of Spontaneous Abortion in Singleton and Twin Pregnancies After IVF/ICSI*, 18 HUMAN REPROD. 1720, 1720–23 (2003).

[144] Graham, *supra* note 135, at 24.

[145] *See* Doubilet et al., *Embryonic Heart Rate*, *supra* note 142.

[146] Peter M. Doubilet & Carol B. Benson, *Outcome of First-Trimester Pregnancies with Slow Embryonic Heart Rate at 6–7 Weeks Gestation and Normal Heart Rate by 8 Weeks at US*, 236 RADIOLOGY 643, 645 (2005).

[147] Peter M. Doubilet et al., *Outcome of Pregnancies with Rapid Embryonic Heart Rates in the Early First Trimester*, 175 AM. J. ROENTGENOLOGY 67, 67 (1999) (footnote omitted). There is debate whether those fetuses who survive could be at an "increased risk for congenital anomalies and aneuploidy," a chromosomal abnormality that results in either too many, or too few, chromosomes. Graham, *supra* note 135, at 24.

On the other hand, "abnormally high heart rate[s] [have] not been shown to be a risk factor for miscarriage."[148] Indeed, rapid fetal heart rate in early pregnancy (i.e., more than 135 beats per minute before approximately the sixth week of gestation, or more than 155 beats per minute after seven weeks), generally coincides with a pregnancy that has a "good prognosis, with a high likelihood of normal outcome."[149]

One recent study reflects this apparent overarching importance of fetal heartbeat even in IVF pregnancies in determining the likelihood that pregnancy will result in successful live birth.[150] Over a seven-month period, researchers observed over 139 IVF pregnancies, with positive fetal cardiac activity present in 78% of cases.[151] While 96% of pregnancies with detectable heartbeat survived through the first trimester, 87% of fetuses *without* cardiac activity did not.[152] The researchers consequently determined that there "was a significant association between presence of [fetal heartbeat] and successful completion of the first trimester."[153]

Further, of the small percentage of fetuses with detected heartbeat that do not reach birth, an indeterminate amount suffer not from any intrinsic flaw, but from the condition of the mother.[154] In short, the conclusion of the medical

---

[148] Graham, *supra* note 135, at 24.

[149] Doubilet & Benson, *supra* note 146, at 69.

[150] *See* Seungdamrong et al., *supra* note 122, at 1711.

[151] *Id.* at 1712.

[152] *Id.* That is to say, while 96% of pregnancies with detectable fetal heartbeat survived through the first trimester, only 13% of fetuses without detectable cardiac activity did similarly.

[153] *Id.*

[154] While most studies focus on the health of the fetus in determining the likelihood of miscarriage or successful completion to term, there is some evidence to suggest that mothers, i.e., pregnant women who suffer from the symptoms of threatened spontaneous abortion, e.g., vaginal bleeding, may affect the predictive accuracy of ultrasound detection of fetal cardiac activity. *See* Apichart Chittacharoen & Yongyoth Herabutya, *Slow Fetal Heart Rate May Predict Pregnancy Outcome in First-Trimester Threatened Abortion*, 82 FERTILITY & STERILITY 227, 227–29 (2004). It does seem to be generally accepted that previous instances of miscarriage are not *necessarily* a determinative factor as to rates of fetal loss in future pregnancies. *See* S.A. Brigham et al., *supra* note 122, at 2869–70 ("[I]n a recurring miscarriage population, there seems to be no obvious benefit of having had a previous live birth on improving subsequent obstetric performance."); *see also* Laufer, *supra* note 140 and accompanying note text. Still, at least one study has suggested otherwise, having found a fetal survival rate of only 82% among women with a history of recurrent pregnancy loss, while "normal" women carrying a fetus that exhibited detectable cardiac activity enjoyed the "expected" survival rate of 98%. Jennifer S. Hyer et al., *Predictive Value of the Presence of an Embryonic Heartbeat for Live Birth: Comparison of Women with and without Recurrent Pregnancy Loss*, 82 FERTILITY & STERILITY 1369, 1371 (2004). At the very least, this calls into question the medically accepted understanding of the relationship between a tendency towards miscarriage and the influence of a mother's medical predispositions on the normal development of her fetal child.

research is that the presence of detectable fetal cardiac activity is "highly predictive of live birth," or, as the Court might understand it, survivability.[155]

VIII. CONCLUSION

The medical literature indicates that fetal heartbeat has an exceedingly strong relationship to predictions of fetal survivability. With some limited exceptions, viz., instances of IVF-induced pregnancies and cases of threatened abortion or a history of recurrent miscarriage, fetal cardiac activity nearly always forecasts successful natal development. In short, absent some external, unexpected development, once a fetus has reached the stage of five or six weeks and his or her heart has begun to function, it is almost certain that he or she will continue to develop to full term. As one obstetrician colloquially remarked, "A million things have to happen for a spermatozoon to fertilize an ovum, and another uncounted number of things have to happen for the fertilized ovum to implant in the uterus. But once the heartbeat begins, it's pretty clear sailing until birth."[156]

To be sure, in some cases, the fetus will not survive until birth, and that unhappy prospect can be determined with varying degrees of certainty. An ectopic pregnancy, for example, is generally incompatible with fetal survival,[157] and the somewhat misnamed molar pregnancy is often not a pregnancy at all.[158] Many other fetal anomalies such as anencephaly[159] or trisomy 18 (Edwards syndrome)[160] cause the child to die shortly after birth, though many are

---

[155] Seungdamrong, *supra* note 122, at 1713, 1715 ("[W]e can counsel IVF patients without a history of recurrent miscarriage that a documented fetal heart rate at 4 weeks after oocyte retrieval (6 weeks' gestational age) is highly predictive of successful completion of the first trimester, as well as of live birth.").

[156] Interview with Donna J. Harrison, *supra* note 113. Contraceptives and contraceptive drugs (the use of which is protected in any event by *Griswold v. Connecticut*, 381 U.S. 479 (1965)), or other drugs that may have an abortifacient effect by preventing implantation, operate prior to the onset of a detectable heartbeat. The State's interest in survivability adheres particularly in successful intrauterine pregnancies.

[157] See *Abdominal Pregnancy Resulting in Live Birth: Some Babies Survive. Can More Be Saved?*, REAL CHOICE, http://realchoice.0catch.com/library/weekly/aa030706a.htm (last visited Mar. 3, 2013).

[158] *See Hydatidiform Mole*, U.S. NAT'L LIBR. MED., http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001907/ (last updated Nov. 21, 2012).

[159] Children born with anencephaly usually die within hours of their birth. *See Anacephaly*, U.S. NAT'L LIBR. MED. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002547/ (last updated May 1, 2011).

[160] A fetus with trisomy 18 possesses three sets of #18 chromosomes rather than the standard two. *See What Is Trisomy 18?*, TRISOMY 18 FOUND., http://www.trisomy18.org/site/PageServer?pagename=whatisT18_whatis (last visited Mar. 27, 2013).

stillborn. Others such as trisomy 21 (Down syndrome)[161] can produce children with various degrees of disability. But the diagnostic problem with fetal anomalies is that it is often difficult to predict if the child will die before or after birth. And, of course, there remains the moral problem of killing someone because he or she was going to die anyway. In other words, in such cases, an abortion would euthanize the fetus, and a state may justifiably decide that euthanasia on human individuals at any stage is morally unacceptable.[162] In *Gonzales v. Carhart*, it will be recalled, the Supreme Court declared that "ethical and moral considerations" inform part of the State's interest in the fetus.[163]

If the anomaly is one that causes the born child to expire, aborting it before birth not only carries with it the moral issue of euthanasia, it also constitutes an unmistakable act of eugenics, ridding the world of a "defective" human, a principle whose revivification would seem to be unacceptable.[164]

The Court's abortion jurisprudence currently understands the interest of the State in protecting fetal life as predominating over the interest of a woman's right to abort her fetus at the point of viability.[165] As has been demonstrated, this approach contains both legal and scientific difficulties. While viability is uncertain and ambiguous, the point at which an independent fetal heart rate is

---

[161] Trisomy 21 is caused when a fetus has an extra #21 chromosome. *See Down Syndrome*, U.S. NAT'L LIBR. MED., http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001992/ (last updated May 16, 2012).

[162] *See* Cruzan v. Director, Mo. Dep't of Health, 497 U.S. 261, 282 (1990) ("Finally, we think a State may properly decline to make judgments about the 'quality' of life that a particular individual may enjoy, and simply assert an unqualified interest in the preservation of human life to be weighed against the constitutionally protected interests of the individual."). Arkansas, however, has included within its Arkansas Human Heartbeat Protection Act an exception for a "highly lethal fetal disorder as defined by the Arkansas State Medical Board." S.B. 134, 89th Gen. Assem., Reg. Sess. (Ark. 2013).

[163] Gonzales v. Carhart, 550 U.S. 124, 158 (2007).

[164] The understandable concern for having a fetal anomaly exception is to try to mitigate the emotional sense of loss and inadequacy of the parents. But the development recently of perinatal hospices has been shown to provide in many cases a better long-term sense of healing than aborting the defective child. *See* Neela Banerjee, *A Place to Turn When a Newborn Is Fated to Die*, N.Y. TIMES, Mar. 17, 2007, at A1.

[165] Some years ago, some federal courts, while acknowledging heartbeat as an indicator of a "live infant," held that the State nevertheless could not protect such infants from a partial birth abortion before viability. The argument was that heartbeat was present before viability and that therefore protecting a "live infant" intruded upon the then seemingly absolute previability right to obtain an abortion. *See* Planned Parenthood of Cent. N.J. v. Farmer, 220 F.3d 127, 136–37 (3d Cir. 2000); Planned Parenthood of Wis. v. Doyle, 162 F.3d 463, 466 (7th Cir. 1998); WomanCare of Southfield, P.C. v. Granholm, 143 F. Supp. 2d 827, 841 (E.D. Mich. 2000). The Court's subsequent decision in *Gonzales v. Carhart* rejected the notion that a restriction on abortion is necessarily invalid just because it extends prior to viability. The argument in this Article is that the viability line is irrational except for its purpose of protecting a fetus until full term live birth and that, therefore, the onset of heartbeat (as detected by the physician) should replace viability as the preferred marker of that State interest.

detectable is unambiguous and a strong predictor of survivability. It does not require educated guesses based on the opinions of individual doctors, but can be objectively identified through the relatively simple application of medical technologies. Moreover, it bears a stronger relation to the ultimate interest of the State in protecting the lives of the pre-born at the point at which the possibility of their independent "meaningful" existence is almost a statistical certainty. At heartbeat, we see that "potential life" is really "life with potential."

This Article suggests that viability should be jettisoned for a different standard—cardiac activity—one that would protect those many more humans who, without the lethal intervention of an abortion, are destined to be born.[166]

[166] It is uncertain how many would be saved. It certainly would number in the thousands. But a decision of the Supreme Court to approve cardiac activity as an appropriate marker would remain only permissive. It would be up to the individual state to decide whether to assert its interest in the survivable fetus at the time of heartbeat. Not all would do so. As of this writing, Arkansas has passed a bill that prohibits (with certain exceptions) abortions after twelve weeks gestational age of fetuses with a detected heartbeat. North Dakota has also passed a fetal heartbeat bill, *see* H.B. 1456, 63rd Leg. Assemb., Reg. Sess. (N.D. 2013), and other states are considering similar legislation.

As time goes by, however, there are indications that more abortions may be induced chemically before implantation (and before the heart begins beating). With the advent of and internet availability of "Ella" (ulipristal acetate), a progesterone receptor antagonist equipotent with RU-486, the self-induction of abortion will become much more common. *See generally* Donna J. Harrison and James G. Mitroka, *Defining Reality: The Potential Role of Pharmacists in Assessing the Impact of Progesterone Receptor Modulators and Misoprostol in Reproductive Health*, 45 ANNALS PHARMACOTHERAPY 115 (2011), *available at* theannals.com; *see also* McCormack v. Hiedeman, 694 F.3d 1004, 1014–18 (9th Cir. 2012) (criminalizing a self-induced abortion by a woman unable to afford an abortion constitutes an undue burden). Notwithstanding all the foregoing, the State would retain a special interest in those fetuses possessing a heartbeat and destined to be born.